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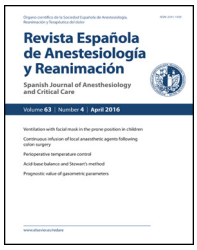

ORIGINAL ARTICLE

# The erector spinae plane block in 4 cases of video-assisted thoracic surgery☆

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**KEYWORDS**
Thoracic surgery;
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**Abstract** Multimodal anaesthesia, combining epidural catheter and general anaesthesia, is a common technique in thoracic surgery, however, epidural catheter placement is not always possible.

Recently, erector spinae plane block has been described, which provides analgesia like that of the epidural block, although unilateral, and which has been used in various procedures at thoracic level. At present, there are no studies comparing the efficacy or safety of this block with those commonly used in thoracic surgery. However, its safety profile and contraindications seem different from those of the epidural catheter, since its placement is done under ultrasound view, the needle introduction is done in plane and the ultrasound target, the transverse process, is easily identifiable and is relatively remote from major neural or vascular structures and the pleura. Unlike other blockages made by anatomical references, erector spinae plane block can be done with the patient in different positions.

We describe our experience with erector spinae plane block as part of a multimodal anaesthetic approach in thoracic surgery.


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**PALABRAS CLAVE**
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**Bloqueo del plano del músculo erector de la columna en 4 casos de cirugía torácica videoasistida**

**Resumen** La anestesia multimodal, combinando catéter epidural y anestesia general, es una técnica habitual en cirugía torácica, sin embargo, la colocación del catéter epidural no siempre es posible.

Recientemente se ha descrito el bloqueo del plano del músculo erector de la columna, que proporciona analgesia similar a la del bloqueo epidural, aunque unilateral, y que se ha utilizado en diversos procedimientos a nivel torácico. En la actualidad no hay estudios que comparen la eficacia o la seguridad de este bloqueo con los habitualmente empleados en cirugía torácica. Sin embargo, su perfil de seguridad y contraindicaciones parecen diferentes a las del catéter epidural, ya que su colocación es ecodirigida, la introducción de la aguja se realiza mediante control en plano y la diana ecográfica, la apófisis transversa, es fácilmente identificable y está relativamente alejada de estructuras neurales o vasculares mayores y de la pleura. A diferencia de otros bloqueos realizados por referencias anatómicas, el bloqueo del plano del erector de la columna puede realizarse con diferentes posiciones del paciente.

Describimos nuestra experiencia con el bloqueo del plano del músculo erector de la columna como parte de un abordaje anestésico multimodal en cirugía torácica.


## Introduction

Thoracic surgery, even video-assisted procedures involving far smaller incisions, is associated with intense postoperative pain. For this reason, multimodal anaesthesia, which usually combines locoregional techniques such as epidural nerve block with general anaesthesia, is a common approach that gives optimal perioperative pain relief. However, thoracic epidural anaesthesia can be contraindicated in some patients, or may be impossible to perform due to technical difficulties.

A recent study describes a novel analgesic technique, the erector spinae plane (ESP) block.[1] This blockade is similar to the epidural technique, but with unilateral analgesia, and has occasionally been used successfully for postoperative or rescue analgesia when other alternatives have failed in various thoracic procedures.[1–5] The safety profile and contraindications for ESP may differ from those of the other techniques currently in use, since the catheter is inserted under ultrasound vision. In thoracic surgery, the target is the transverse process of T5, an easily identified structure located relatively far from the pleura and major neural or vascular structures,[3] which makes ESP an easy and possibly safe, albeit deep, technique.[6] Finally, it provides extensive analgesia with a single administration. This means that the blockade can be performed relatively distant from the incision area in patients with specific local characteristics, such as infection, tattoos or deformities, among others.

Case reports of ESP in thoracic surgery have so far described administration of the blockade at the end of the intervention,[3] after epidural failure,[5] administration without a catheter before the intervention,[2] or as part of a multimodal anaesthetic approach in which the catheter is placed before the start of surgery in order to provide both intraoperative and continuous postoperative analgesia.[7] However, the ESP blockade has not been compared with other techniques, such as epidural, paravertebral or intercostal blockades in large series.

## Case 1

A 52-year-old woman scheduled for resection of left upper lobe metastases using video-assisted thoracic surgery (VATS). Her history included type II obesity and colon cancer treated with left hemicolectomy, left oophorectomy and bilateral salpingectomy.

The preoperative laboratory workup showed a platelet count of 89 x$10^9$/L (normal range 130–440 $\times$ $10^9$/L). Although this finding is not an absolute contraindication for epidural puncture, we chose to perform an ESP block after obtaining the patient's informed consent.

After anaesthesia induction (fentanyl 100 $\mu$g, propofol 180 mg, rocuronium 70 mg) and intubation, the patient was placed in the right lateral decubitus position. Following the technique described by Forero et al.[1] T5 was located by palpation, taking C7 as reference. After surgical skin prep, a linear probe (Esaote® LA523 4–13 MHz, Maastricht, Holland) with a sterile sheath was placed over the site and slid laterally 3 cm to the transverse process (Fig. 1). The probe was rotated vertically and an 80 G 18 mm Tuohy epidural needle was inserted in plane in a craniocaudal direction (Fig. 2). When the needle reached the transverse process, 1 ml of local anaesthetic was injected, making sure the fluid entered the fascial plane between the erector spinae muscle and the transverse process (Fig. 3). After confirming correct location, we injected 20 ml of 0.5% bupivacaine and placed an epidural catheter for continuous postoperative infusion.

The surgical procedure was uneventful. Anaesthesia was maintained with the100 $\mu$g of fentanyl administered